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From: Info-Hams Mailing List and Newsgroup <info-hams@ucsd.edu>  
Errors-To: Info-Hams-Errors@UCSD.Edu  
Reply-To: Info-Hams@UCSD.Edu  
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Subject: Info-Hams Digest V93 #934  
To: Info-Hams

Info-Hams Digest                      Mon, 2 Aug 93                      Volume 93 : Issue 934

Today's Topics:

Amateur Radio Elmers List Info and Administrivia  
Coordinates -> distance calculation  
RSGB GB2RS NEWS 1ST AUGUST  
TS50

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>  
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.

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Date: 1 Aug 93 11:45:10 GMT  
From: ogicse!uwm.edu!vixen.cso.uiuc.edu!moe.ksu.ksu.edu!crcnis1.unl.edu!  
news.unomaha.edu!news@network.ucsd.edu  
Subject: Amateur Radio Elmers List Info and Administrivia  
To: info-hams@ucsd.edu

Posted-By: auto-faq 2.4  
Archive-name: radio/ham-radio/elmers/admin  
Revision: 1.4 04/25/93 23:02:45  
Changes: pit-manager.mit.edu is now rtfm.mit.edu

This administrivia file and the companion Amateur Radio Elmers Resource  
Directory are intended for non-commercial distribution via Usenet. Any  
other uses, please E-mail for permission.

A Brief Historical Overview:  
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If there is any one constant in the changing state of the communications

art, it is that "Hams" (Amateur Radio Operators) have always been on the forefront of it. Rumors abound where the term "Ham" came from. Some of the more amusing are described at the end of this article.

Regardless of origin of the name, a "Ham" is universally recognizable as one who experiments in radio and communications.

Whether it be constructing a low-power CW radio with vacuum tubes, or designing TCP/IP packet networks, such experimentation has historically spilled over into the mainstream such as was the case with Edwin Armstrong, who developed the regenerative oscillator and FM radio, or General Curtis LeMay (W6EZV) who was instrumental in making Single-Sideband the communications standard for the Strategic Air Command (1947-1992, now reorganized into a joint command called StratComm) and eventually the U.S. Air Force. Although packet-switching techniques originated from DARPA (Defense Advanced Research Projects Agency) and the ARPANet, no one can deny the tremendous influence that amateurs have had in demonstrating the viability of TCP/IP and AX.25 communications via radio links. The efforts of AMSAT (the Amateur Satellite Corporation), including the development of many ham satellites and the low-orbiting Microsats (communications satellites no bigger than a breadbox that use store-and forward packet techniques), have certainly advanced the state-of-the-art in communications, one of the defined purposes of the Amateur Radio Service, as recognized by international treaty.

Since in many cases hams are writing "the book", there is often no "book" or other established reference for a beginner to refer to. Traditionally, information has been passed on from ham to ham via word-of-mouth. Like many of the traditional crafts, a variation of the Master-Apprentice system has emerged, the Elmer-Novice relationship. Called "Elmers" because they are usually older and wiser, having the benefit of many years in the hobby, including several failed projects, and an electric shock or two, they have traditionally been the mainstay of amateur radio, and the source of many new hams, particularly those interested in working on emerging technologies.

Even more importantly, Elmers provided an outlet for the impatient newcomer who wanted "to know everything, and right away." Faced with such a request, a good Elmer will smile and proceed to lead the novice through some project or operating experience. Several hours, days, or weeks later, the novice would have his answers, but would have earned them. Even better, the sense of accomplishment would boost the novice's confidence and nudge him or her down the road to being a model, experienced ham operator.

Many present hams feel that such an experience is missing today. In today's hustle-bustle world, the response to such natural curiosity and

desire to learn is, more often than not, "I'm too busy" or "RTFM." As a result, the quality of new hams declines and the knowledge and operating habits they develop in their first formative months and years leave much to be desired. And the very same hams who claim that they "can't understand the new generation" also, in almost the same breath, lament about the "decline of amateur radio."

What is an Elmer today?

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An Elmer today is of any age, male or female, who has some expertise and is willing to share it with beginners. Elmers don't even need to be licensed amateurs, just people with knowledge in some area of electronics or communications technology.

What is a Usenet Elmer?

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With the ever-widening scope of the Internet, and the amateur radio newsgroups on Usenet, the potential for Elmers to share their knowledge to a wide audience has never been greater. To that end, I have started to maintain a list of such Elmers. Volunteers need only send me their name, E-mail address, and area of expertise. I have set up an administrivia mailbox for this purpose (elmers-request@unomaha.edu, the default Reply-To: of this message).

Those desiring a more extensive list, or who need more specific assistance, are encouraged to contact Rosalie White, WA1STO, Educational Services Manager at the American Radio Relay League, 225 Main St., Newington, CT 06111 or via electronic mail addressed to rwhite@arrl.org.

How may I obtain the latest copy of the Elmers List?

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There are currently 4 ways of obtaining the Elmers List. Any site at least reachable by Internet E-mail can use options 3 or 4:

1. Usenet News: The latest copy of the list can be found in the companion posting to this message, "Amateur Radio Elmers Resource Directory." Since the list is cross-posted to rec.radio.amateur.misc, rec.radio.info, rec.answers, and news.answers on the 1st of each month, with an expiration date 6 weeks into the future, there should always be a copy available at most news sites. Check your newsreader documentation for information about reading previously-read articles.

2. Anonymous FTP: If your site is directly connected to the Internet, you may retrieve the latest copy via File Transfer Protocol (FTP) from

the following sites:

```
ftp.cs.buffalo.edu  /pub/ham-radio/elmers*  
rtfm.mit.edu       /pub/usenet/news.answers/radio/ham-radio/elmers/*
```

3. Mailing-List: Since the list is cross-posted to rec.radio.info, the latest copy may be obtained from the mailing-list gateway for that newsgroup (along with many other informational articles about radio) when it is published each month. To subscribe, send E-mail to:

listserv@ucsd.edu

and in the BODY (not the Subject) of the message, write:

subscribe radio-info

The server may not be able to determine your return address. In that case write:

subscribe radio-info (your E-mail address)

You should get an acknowledgement very shortly.

4. Mail-Server: If you don't want to read through the entire gateway of rec.radio.info, or want a copy of the list right away, send E-mail to:

mail-server@rtfm.mit.edu

and in the BODY (not the Subject) of the message, write:

```
send usenet/news.answers/radio/ham-radio/elmers/admin  
send usenet/news.answers/radio/ham-radio/elmers/list  
send usenet/news.answers/radio/ham-radio/elmers/diff
```

and the latest copy of the list should be sent to you E-mail within 24 hours (the mail-server uses batch priority to reduce system demand).

How may I contribute to the Elmers List?

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By using this resource, you are benefitting the net by obtaining assistance in the fastest and most efficient way possible. By volunteering to appear on this list, you are contributing to the good reputation of the radio-related newsgroups.

Thanks to all the volunteer Elmers, as well as courteous list users, for making this service a success.

--

73, Paul W. Schleck, KD3FU

pschleck@unomaha.edu (personal mail)

elmers-request@unomaha.edu (Elmers List administrivia)

\* Possible origins of the word HAM:

The acronym "Home Amateur Mechanic" or...

from the Cockney pronunciation of "L'amateur" or...

the initials of the founder of the American Radio Relay League, Hiram Maxim, W1AW (his actual middle name being Percy apparently notwithstanding) or...

from the call letters of one of the first amateur stations at Harvard, H.A.M. (please, no flames from W1XM at MIT)

Dale Mosby, N7PEX, offers the explanation that HAM must stand for "Hardly Any Money," considering the investment one could make in the hobby.

Knowledgeable individuals from the American Radio Relay League (ARRL), and other radio historians, seem to agree that the terms "Ham" and "Lid" (an inept operator) both originated with landline telegraphy. A "Ham" was a show-off and a "Lid" was a telegraph operator so inexperienced, he had to use a pot or can lid to rest his telegraph sounder on to properly copy the code.

As an interesting historical footnote, early telegraph operators may have been the first to experience the infamous curse of our communications age, Repetitive Stress (or "Carpal Tunnel") Syndrome (called "Glass Arm" in those days, which encouraged the invention of the semi-automatic or "bug" key).

(Larry E. McDonald, N6ZMB, wrote to point out another plausible origin, which doesn't necessarily contradict the ARRL version. The term "ham" may have been derived from "ham-fisted" or "ham-handed" to describe poor telegraph operators who were hired from the ranks of radio operators. Or maybe "ham-fisted" and "ham-handed" are derived from "ham." Who knows?)

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Date: Mon, 2 Aug 1993 00:50:36 GMT

From: sdd.hp.com!hpscit.sc.hp.com!hplextra!hpfcso!hpfcddd!deyke@network.ucsd.edu

Subject: Coordinates -> distance calculation

To: info-hams@ucsd.edu

Here is something I write some time ago:

```
/* qth: qth, locator, distance, course computations */

static char sccsid[] = "@(#) qth.c  1.7  87/09/13 19:54:50";

#include <ctype.h>
#include <math.h>
#include <string.h>

#define MYBREITE (481 * 36001 + 381 * 601 + 331)
#define MYLAENGE -( 81 * 36001 + 531 * 601 + 281)
#define RADIUS  6370.0

static char **argv;
static int argc;

/*-----*/

static void usage()
{
    extern void exit();

    printf("usage:    qth <place> [<place>]\n");
    printf("           <place> ::= <locator>\n");
    printf("           <place> ::= <grd> [<min> [<sec>]] east|west\n");
    printf("                       <grd> [<min> [<sec>]] north|south\n");
    printf("\n");
    printf("examples: qth jn48kp\n");
    printf("           qth ei25e\n");
    printf("           qth 8 53 28 east 48 38 33 north\n");
    printf("           qth jn48aa 9 east 48 30 north\n");
    exit(1);
}

/*-----*/

static double safe_acos(a)
double a;
{
    if (a >= 1.0) return 0;
    if (a <= -1.0) return M_PI;
    return acos(a);
}

/*-----*/
```

```

static double norm_course(a)
double a;
{
    while (a < 0.0) a += 360.0;
    while (a >= 360.0) a -= 360.0;
    return a;
}

/*-----*/

static long centervalue(value, center, period)
long value, center, period;
{
    long range;

    range = period / 2;
    while (value > center + range) value -= period;
    while (value < center - range) value += period;
    return value;
}

/*-----*/

static void sec_to_loc(laenge, breite, loc)
long laenge, breite;
char *loc;
{
    laenge = 180 * 36001 - laenge;
    breite = 90 * 36001 + breite;
    *loc++ = laenge / 72000 + 'A';    laenge = laenge % 72000;
    *loc++ = breite / 36000 + 'A';    breite = breite % 36000;
    *loc++ = laenge / 7200 + '0';    laenge = laenge % 7200;
    *loc++ = breite / 3600 + '0';    breite = breite % 3600;
    *loc++ = laenge / 300 + 'A';
    *loc++ = breite / 150 + 'A';
    *loc = '\0';
}

/*-----*/

static void sec_to_qra(laenge, breite, qra)
long laenge, breite;
char *qra;
{
    long z;
    static char table[] = "fedgjchab";

```

```

    laenge = -laenge;
    while (laenge < 0) laenge += 26 * 72001;
    breite = breite - 40 * 36001;
    while (breite < 0) breite += 26 * 36001;
    *qra++ = (laenge / 7200) % 26 + 'A';    laenge = laenge % 7200;
    *qra++ = (breite / 3600) % 26 + 'A';    breite = breite % 3600;
    z = (laenge / 720) + 71;    laenge = laenge % 720;
    z -= (breite / 450) * 10;    breite = breite % 450;
    *qra++ = z / 10 + '0';
    *qra++ = z % 10 + '0';
    *qra++ = table[laenge / 240 + (breite / 150) * 3];
    *qra = '\0';
}

/*-----*/

static void loc_to_sec(loc, laenge, breite)
char *loc;
long *laenge, *breite;
{
    char *p;

    for (p=loc; *p; p++)
        if (*p >= 'a' && *p <= 'z') *p -= 32;

    if (loc[0] < 'A' || loc[0] > 'R' ||
        loc[1] < 'A' || loc[1] > 'R' ||
        loc[2] < '0' || loc[2] > '9' ||
        loc[3] < '0' || loc[3] > '9' ||
        loc[4] < 'A' || loc[4] > 'X' ||
        loc[5] < 'A' || loc[5] > 'X' ||
        loc[6]) usage();

    *laenge = 180 * 36001
        - 20 * 36001 * (loc[0] - 'A')
        - 2 * 36001 * (loc[2] - '0')
        - 5 * 601 * (loc[4] - 'A')
        - 1501;

    *breite = - 90 * 36001
        + 10 * 36001 * (loc[1] - 'A')
        + 36001 * (loc[3] - '0')
        + 1501 * (loc[5] - 'A')
        + 751;
}

/*-----*/

```



```

static void qra_to_sec(qra, laenge, breite)
char *qra;
long *laenge, *breite;
{
    char *p;
    long z;
    static ltab[] = {2401, 4801, 4801, 4801, 2401, 01, 01, 01, 01, 2401};
    static btab[] = {3001, 3001, 1501, 01, 01, 01, 1501, 3001, 01, 1501};

    for (p=qra; *p; p++)
        if (*p >= 'a' && *p <= 'z') *p -= 32;

    if (qra[0] < 'A' || qra[0] > 'Z' ||
        qra[1] < 'A' || qra[1] > 'Z' ||
        qra[2] < '0' || qra[2] > '8' ||
        qra[3] < '0' || qra[3] > '9' ||
        qra[4] < 'A' || qra[4] > 'J' || qra[4] == 'I' ||
        qra[5]) usage();

    z = 10 * (qra[2] - '0') + qra[3] - '0';
    if (z < 1 || z > 80) usage();

    *laenge = - (qra[0] - 'A') * 72001
        - (z - 1) % 10 * 7201
        - ltab[qra[4] - 'A']
        - 1201;

    *breite = 40 * 36001
        + (qra[1] - 'A') * 36001
        + (7 - (z - 1) / 10) * 4501
        + btab[qra[4] - 'A']
        + 751;
    *laenge = centervalue(*laenge, MYLAENGE, 26 * 72001);
    *breite = centervalue(*breite, MYBREITE, 26 * 36001);
}

/*-----*/

static char *course_name(a)
double a;
{
    if (a <= 11.25) return "North";
    if (a <= 33.75) return "North-North-East";
    if (a <= 56.25) return "North-East";
    if (a <= 78.75) return "East-North-East";
    if (a <= 101.25) return "East";
    if (a <= 123.75) return "East-South-East";
}

```

```

    if (a <= 146.25) return "South-East";
    if (a <= 168.75) return "South-South-East";
    if (a <= 191.25) return "South";
    if (a <= 213.75) return "South-South-West";
    if (a <= 236.25) return "South-West";
    if (a <= 258.75) return "West-South-West";
    if (a <= 281.25) return "West";
    if (a <= 303.75) return "West-North-West";
    if (a <= 326.25) return "North-West";
    if (a <= 348.75) return "North-North-West";
    if (a <= 371.25) return "North";
    return "???";
}

/*-----*/

static int get_int(s, lower, upper)
char *s;
int lower, upper;
{
    int i;

    if (!sscanf(s, "%d", &i)) usage();
    if (i < lower || i > upper) usage();
    return i;
}

/*-----*/

static void print_qth(prompt, laenge, breite, loc, qra)
char *prompt;
long laenge, breite;
char *loc, *qra;
{
    char *pl, *pb;

    if (laenge < 0) { pl = "East"; laenge = -laenge; }
    else
        pl = "West";
    if (breite < 0) { pb = "South"; breite = -breite; }
    else
        pb = "North";
    printf("%s%3ld %2ld' %2ld\" %s %3ld %2ld' %2ld\" %s  --> %s = %s\n",
        prompt,
        laenge / 3600,
        laenge / 60 % 60,
        laenge % 60,
        pl,
        breite / 3600,
        breite / 60 % 60,
        pb,
        loc,
        qra);
}

```

```

        breite % 60,
        pb,
        loc,
        qra);
}

/*-----*/

static int parse_arg(laenge, breite)
long *laenge, *breite;
{
    int c;

    if (! *argv) return -1;

    if (isalpha(*argv[0])) {
        switch (strlen(*argv)) {
            case 5:
                qra_to_sec(*argv, laenge, breite);
                break;
            case 6:
                loc_to_sec(*argv, laenge, breite);
                break;
            default:
                usage();
                break;
        }
        argv++;
        return 0;
    }

    *laenge = 3600l * get_int(*argv, 0, 179);
    argv++;
    if (*argv && isdigit(*argv[0])) {
        *laenge += 60l * get_int(*argv, 0, 59);
        argv++;
        if (*argv && isdigit(*argv[0])) {
            *laenge += get_int(*argv, 0, 59);
            argv++;
        }
    }
    if (! *argv) usage();
    c = *argv[0];
    if (c == 'E' || c == 'e') *laenge = - *laenge;
    else if (c != 'W' && c != 'w') usage();
    argv++;

    if (! *argv) usage();

```

```

*breite = 3600l * get_int(*argv, 0, 89);
argv++;
if (*argv && isdigit(*argv[0])) {
    *breite += 60l * get_int(*argv, 0, 59);
    argv++;
    if (*argv && isdigit(*argv[0])) {
        *breite += get_int(*argv, 0, 59);
        argv++;
    }
}
if (! *argv) usage();
c = *argv[0];
if (c == 'S' || c == 's') *breite = - *breite;
else if (c != 'N' && c != 'n') usage();
argv++;

return 0;
}

```

/\*-----\*/

```

main(pargc, pargv)
int pargc;
char **pargv;
{

    char loc1[7], loc2[7];
    char qra1[6], qra2[6];
    double a1, a2;
    double b1, b2;
    double e;
    double l1, l2;
    int two_is_me;
    long breite1, breite2;
    long laenge1, laenge2;

    argc = --pargc;
    argv = ++pargv;

    if (parse_arg(&laenge1, &breite1)) usage();
    sec_to_loc(laenge1, breite1, loc1);
    sec_to_qra(laenge1, breite1, qra1);

    two_is_me = 0;
    if (parse_arg(&laenge2, &breite2)) {
        laenge2 = MYLAENGE;
        breite2 = MYBREITE;
        two_is_me = 1;
    }
}

```

```

}
sec_to_loc(laenge2, breite2, loc2);
sec_to_qra(laenge2, breite2, qra2);

if (*argv) usage();

l1 = laenge1 / 648000.0 * M_PI;
l2 = laenge2 / 648000.0 * M_PI;
b1 = breite1 / 648000.0 * M_PI;
b2 = breite2 / 648000.0 * M_PI;

e = safe_acos(sin(b1) * sin(b2) + cos(b1) * cos(b2) * cos(l2-l1));

if (!e)
    print_qth("qth: ", laenge1, breite1, loc1, qra1);
else {
    if (two_is_me) {
        print_qth("your qth:      ", laenge1, breite1, loc1, qra1);
        print_qth(" my  qth:      ", laenge2, breite2, loc2, qra2);
    }
    else {
        print_qth("1st  qth:      ", laenge1, breite1, loc1, qra1);
        print_qth("2nd  qth:      ", laenge2, breite2, loc2, qra2);
    }
}

printf("distance:      %.1f km\n", e * RADIUS);

a1 = safe_acos((sin(b2) - sin(b1) * cos(e)) / sin(e) / cos(b1)) / M_PI *
180.0;
a2 = safe_acos((sin(b1) - sin(b2) * cos(e)) / sin(e) / cos(b2)) / M_PI *
180.0;

if (l2 > l1) a1 = 360.0 - a1;
if (l1 > l2) a2 = 360.0 - a2;

a1 = norm_course(a1);
a2 = norm_course(a2);

if (two_is_me) {
    printf("course you->me: %3.0f (%s)\n", a1, course_name(a1));
    printf("course me->you: %3.0f (%s)\n", a2, course_name(a2));
} else {
    printf("course 1 --> 2: %3.0f (%s)\n", a1, course_name(a1));
    printf("course 2 --> 1: %3.0f (%s)\n", a2, course_name(a2));
}
}
return 0;
}

```

-----  
Date: Fri, 30 Jul 1993 11:05:50 -0600  
From: destroyer!cs.ubc.ca!alberta!nebulus!ve6mgs!ted@uunet.uu.net  
Subject: RSGB GB2RS NEWS 1ST AUGUST  
To: info-hams@ucsd.edu

Good morning. It's Sunday the 1st of August and here is the GB2RS news broadcast, prepared by the Radio Society of Great Britain.

First the headlines:- 29MHz and 50MHz Repeater applications; Expedition to Rathlin Island; and the RSGB represented at Buckingham Palace.

The RSGB Repeater Management Group have received some applications for 29MHz and 50MHz Repeaters. In order to pursue these with the Radiocommunications Agency, it will be useful if all other possible applicants can contact the Society without delay, preferably before the end of August. Requests for application documentation should be sent to the Amateur Radio Section at RSGB Headquarters. Completed applications and any requests for information should be sent to G4NJU, Special Projects Manager, RMG, whose address is correct in the RSGB Call Book. Telephone G4NJU on 0908 378277 or send a message via Packet @ GB7BEN.

Now news of an expedition to Rathlin Island. The callsign GB2MRI will be aired by the Ballymena Amateur Radio Club from Thursday the 5th to Sunday the 8th of August inclusive. The Rathlin Island locator is IO65VH and the WAB square is D15 Antrim. For further information contact Jeff, GI4HCN on 0266 659769.

The 23cm Beacon GB3MCB was returned to service on the 22nd of July. The beacon is on 1296.860MHz and is located in Cornwall. Further details and/or reports to the Beacon Keeper G3YJX, QTHR.

At a recent Garden Party at Buckingham Palace, Peter Chadwick, G3RZP and his wife Lynne, G4FNC attended as President of the Radio Society of Great Britain. Bert Mair, who many members will remember from his many years of employment by the Society, and his wife Margaret were also invited and attended on behalf of the Society.

The North Devon seventy centimetre voice repeater GB3ND, on RB14 has now been returned to service. The North Devon Repeater Group apologises for any inconvenience caused. For further details about the repeater, and the group who operate it, contact G3PGA whose address is correct in the RSGB Call Book.

Now some items of HF DX news from the weekly RSGB DX News Sheet which is edited by Brendan McCartney, G4DY0. From Hong Kong, G0TBI is active as VR2/G0TBI from now until Friday the 13th of August. On CW check 14,017 and

21,017kHz and on SSB 14,245 and 21,245kHz, all plus or minus QRM. From Somalia, PA3CXC will operate as KN4NL/T5 from now until the end of August from Manderla in Southern Somalia. From Belau, the callsigns KC6IG, KC6IL, KC6IM, KC6KY, KC6IJ, KC6LI, KC6OG, KC6TZ and KC6UP will be aired from Sunday the 8th to Friday the 13th of August. The operators are members of the Kyouto Amateur Radio Club and activity will be on all bands from 6 to 160 metres inclusive, on CW, SSB and RTTY. A 6 metre beacon will operate on 50.130MHz. From Belize, a group of American operators will sign V31BR from Ambergris Cay for one week starting on Monday the 9th of August. Activity will be mainly SSB and RTTY.

We know of only one rally taking place today Sunday the 1st:

The McMichael Rally and Car Boot Sale is being held at the Haymill Youth and Community Centre, Burnham Lane, Slough. The Centre is near the Burnham railway station. Starts at 10.30am. Talk-in will be on channel S22. This rally was originally scheduled for the 18th of July.

We have been notified of four events for Sunday the 8th of August:

The Derby and District Amateur Radio Society Mobile Rally is to be held at the Littleover Community School, Pastures Hill, Littleover. The school is on the A5250 road just off its junction with the A38 on the south side of Derby. Features the usual attractions plus a monster Junk sale. Details from Martin, G3SZJ on 0332 556875.

The Flight Refuelling Amateur Radio Society Hamfest'93 is to be held at the Flight Refuelling Sports Ground, Merley, Wimborne, Dorset. Doors open at 10.00am. For the disabled there will be a special parking area available in the grounds. There are trade stands, a large bring & buy stall and a radio & electronics car boot sale. Plus a display of vintage and military radio equipment. Talk in will be on channel S22. Overnight camping on the Saturday night is available. Contact Richard, G4VCQ on 0202 691021 for details.

The Vale of Evesham Radio Amateur Club, Annual Car Treasure Hunt around the Vale will start from Evesham Post Office, High Street at 2.00pm. Telephone 0386 41508 for further details.

Wirral Amateur Radio & Computing Rally is to be held at the Masonic Hall, Manor Road, Wallasey. Doors open at 11.00am. Further information from D G Clifford on 051 639 5922 or D Roberts on 061 476 3076.

HF contest news now:

The Romanian DX Contest will take place next weekend, during Saturday the 7th and Sunday the 8th of August on CW and SSB. The next scheduled RSGB HF event is not until next month. The SSB Field Day Contest will be held during the

weekend Saturday the 4th and Sunday the 5th of September. See July RadCom page 81 for details.

VHF contest news:

The RSGB's 2nd 432MHz Fixed Contest is scheduled for Sunday the 22nd of August. See February RadCom page 67 for further details.

Special events

The callsign GB2RAF will be aired during Wednesday the 4th of August for RAF St Mawgan Air Day. The station will be operated by members of the Cornish Branch of the RAFARS on 40, 15 and 2 metres. Further details from G3NPB tel: 0872 74282.

And now the solar factual data:

The period from the 16th to the 25th of July has seen little solar activity with the quiet side of the sun moving away, and no flares of any note. The sunspot count meaned about the 93s with the count slightly declining as the period progressed. The solar flux levels increased slightly and averaged 102 units for the period. The geomagnetic levels hardly changed, being quiet most of the time, but were unsettled on the 20th and 21st. The period averaged an AP index of 8. The state has been 'nil nothing to report'. The radio quality indices have varied from poor to very good over individual paths on a day-to-day basis, but the averages worked out at normal levels. The 18th and the 19th were the best days, being just above normal. The aa indices as supplied by the British Geological Survey for the period 6th to 12th July were quiet, with daily averages being 22.3 nanoTeslas about K3. The period from the 13th to the 19th of July was very quiet, and averaged 9.8 nanoTeslas about K1, but with some periods down to only 2 nanoTeslas K0. The X-Ray flux increased slightly over the period and averaged B1.4 units. The Perseids meteor shower is expected to take place from the 10th to the 20th of August and to peak during the night of the 11th and 12th.

Now the ionospheric data for Central France:

The F2 daytime critical frequencies at Poitiers as reported by Meudon have hardly changed and averaged 7.5MHz with the daily highs being around 20.00 hours. The darkness hour lows averaged 4.5MHz, and occur around 04.00 hours. For most of the day levels are around 5.0 to 6.0MHz and would be lower in the UK. The effect of this is giving rather long skip on the 7MHz band. Short skip will only occur around the peak time about 20.00 hours and last only a short



time.

Now the ionospheric data for the north:

The F2 daytime critical frequencies at Ekaterinberg averaged 6.7MHz and the darkness hour lows 5.0MHz. Since 1969 satellites have been measuring the X-Ray flares. The larger M5 or greater flares, seem to fit a cycle pattern that is very much like the auroral patterns, with maximums spaced either side of the spot maximum with the post maximum being much larger.

And lastly the solar forecast:

This week, the more active side of the sun will be coming into view; solar flux levels are expected to be about 100, with just unsettled geomagnetic activity. The radio quality indices are expected to be normal.

And that's the end of the solar information.

Finally in the main news, SSL has informed the Society that as of last Wednesday morning, the latest callsigns issued were in the G0 T X and G7 P B series, and Novice calls in the 2 0 A G and 2 1 C E series. .

You're listening to GB2RS, the news broadcasting service of the Radio Society of Great Britain, transmitting in the 80, 40, 6 and 2 metre bands.

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Date: 31 Jul 93 12:08:52 GMT  
From: news-mail-gateway@ucsd.edu  
Subject: TS50  
To: info-hams@ucsd.edu

Howard, VK3AYV wrote:

>  
>Apologies if this has already appeared, but my last posting seems to have  
>fallen into a "black hole!" Anyway, here goes again;  
>I wonder if anyone can confirm or deny the apparently rather poor 3rd order  
>transmit IMD products that were reported on this radio in a "Rad Comm"  
 ^^^  
I cannot! No means of measuring it accurately here.

>review recently. They claimed a measurement of -24dB on some bands to a  
>worst case of -16 dB on 14 MHz! I'm just wondering if ALL TS50's are like

>this, or whether it was a faulty unit. I can't even check the specs on the  
>"glossy brochure, as no-one has any brochures it seems. Radios yes,  
^^^^^^^^^^^^^^^^^^

Those numbers quoted by the manufacturer are probably of dubious origin  
anyway (see below), so maybe its good that you haven't been able to find  
a brochure!

>brochures no! Thanks..

>

Howard, I am a little confused about what it is you're asking, but I  
did resposned to your original post with:

>>>>

>Has anyone had any experience with the new \*small\* Kenwood TS-50 HF

Yes, I own one, and I'm quite pleased with it. I wouldn't want to  
carry it in a back-pack, but it is nice and small. I used mine in  
the recent U.S. Field Day operating from home on battery power and  
50W output. Had a real ball with it too! 196 FD QSO's with 50W all  
on 40 meters. No hint of squeaks and blips that are common with other  
lesser synthesized equipment. Here in the U.S. 40 meters is jammed  
with big, strong signals all day long during field day, and if the  
radio suffered at all in that I would have seen it.

Plus, I use it on 20 meters often on the EME net, as I am an active  
2 meter EME operator. I also used it with a uWave Modules transverter  
and made several EME QSO's with it to boot! It works well. Much  
better than something like a 430 for example. Haven't had it mobile  
as yet, so can't comment on that.

<<<<<<

Now!

The reason I'm a little confused is that the original question was  
regarding the comment "Rx leaves a little bit to be desired"! And  
now you're asking about Tx 3rd order products. Anyway.....

Below from Howard's original message:

> I read in "Radio Communication" the Rx leaves a little bit to be  
> desired and the 3rd order intermod products appeared to be quite  
> poor at only -16db on 14mhz! Ranging to best case of about -24db  
> on the other bands.

And the response was:

>>>>>>>>

??????????????????

I'm not familiar at all with the mag you mentioned and have not  
seen any other performance reviews. From my experience so far with

it I'd really say I would want to see tests from another source if you're concerned about it. Like ARRL, which I feel does a real nice job with their reviews and bench tests. At least they publish the test setup info, and test all radios with the same, exact setup if the radio is good enough. And if it isn't they'll tell you.

>"3rd order intermod products"

The number usually expressed is 3rd order intercept point, but how its determined is probably more important than the number! This particular test is open to considerable interpretation anyway, and the manufacturers have been known to fudge the test quite a bit to make their radio look better!

For example, several of the really popular, big rigs, have been shown to be well off from the stated specs from the manufacturer. Some must be tested with the main and interfering signals separated by more than 200khz because the test could not be done with closer spacing due to the generated noise being so bad! At least when that happens, ARRL tells you in the test that it was "noise limited" and they had to increase the separation to make any measurement at all! So the numbers by themselves can be VERY mis-leading, without knowing the details of HOW the test was made. Whats behind the number MAY be more important than the number itself! Which, to me anyway, makes the ARRL's consistent test methodology even more important. (No, I'm not an officer of ARRL). Hi! In fact, I'm not even a member!

For example, 3rd order intercept measured on a TS-930 at various spacings result in the following numbers (taken from "Low Band DXing" by John Devoldere, ON4UN). At 20khz, -6dbm; at 100khz, +8dbm and at 200khz, +19dbm! So you can see from this example that expressing the 3rd order intercept as an absolute value, without knowing the spacing used to make the determination, is meaningless! Notice that the manufacturers will often say 14mhz, narrow CW filter installed as a note to the quoted 3rd order intercept number. But they rarely tell us the spacing used to generate that number! Which is often why independent tests cannot match the claims of the vendors and only on occasion actually get close!

The following added in this response:

They may also state "preamp off" as a note to this quoted value! This is really a trick to improve the resultant number, as most equipment today uses a high level quad-mixer as the 1st in the radio. The "preamp" is what we used to call the RF stage in the earlier designs. The trick is, that shutting the preamp off will automatically improve the radios dynamic range by the db rating

of the preamp! In other words, if its a 10db amplifier, it will improve the radios dynamic range AND resultant 3rd order intercept number by 10db, by simply turning it off!

Being able to turn the RF amp off is valuable in practice for that very reason! Most of our present day gear has an excess of available sensitivity, especially below 10mhz, so below that frequency you can often improve the radio's performance by turning it off! The same goes for the attenuator as well. Adding 20db of attenuation improves the dynamic range by 20db, automatically! Notice that I have NEVER seen a dynamic range evaluation ever state that the attenuator was used! Altho' I have seen tests from independent sources vary so much for a manufacturers claims, that I've wondered if they used it!!!

Pick the right spacing and you can darn near make it anything you want! Attempting to make comparisons based on this number alone (not knowing "how" it was determined) between equipment from different manufacturers makes it a real crap shoot! Wonder if you'd care to quess which number Kenwood quoted on the 930? The answer is, 'E', NONE OF THE ABOVE! They chose their own number. How'd they come up with it? Your guess is as good as anyone's.

>>>>>>>>>

Added comment here:

When comparing these numbers there are several points of concern to keep in mind. A spacing of 20khz is usually attempted first when making this measurement, as a kind of defacto standard among INDEDPENDENT (not the manufacturers) testing bodies. What the manufacturers use to generate the number is what they choose to use! They only rarely tell us in a spec-sheet HOW they determined them. Furthermore, they rarely if ever, will rate the performance of their synthesizers (if used) with the dbc number. Dbc (carrier-to-noise ratio) rates an oscillators generated noise sidebands, and today needs to be VERY good!

Actually, they should be BETTER than the noise floor of the radio under test, or they WILL limit the performance and dynamic range of the equipment. This number is probably the most significant measure of a quality piece of equipment considering the present technology and application. Poor performance here is often the source of a 3rd order intercept number that doesn't quite match up with the radio's other qualities, as a poor dbc rating of the oscillators that drive the mixers will result in degrading the quality of otherwise superior IF filters for example, and severly limit the radios potential dynamic range. This is often the source of one radio seeming to be a really "quiet" receiver as hams generally express it. It is also the reason that dynamic range

testing and 3rd order intercept determination OFTEN must be made at a spacing of greater than the desired 20khz.

<<<<<<<<<

The original response continued with:

'Spec'manship may not be all its cracked up to be unless you have a variety of test results from sources you can trust. The manufacturers MAY not be that source unless their numbers are verified otherwise.

Another example of just really how meaningless the number can be came up with the Kenwood 940. Kenwood rated it at +14dbm. Again from "Low Band DXing", N6ND tested one at 100khz, and determined it was only +2dbm! He was not able to test the evaluation unit at 20khz due to excessive LO noise and had to expand the spacing to 100khz! ON5DO's test at 20khz (this is getting messy!) came up with,,guess what? Miracle of miracle's +14dbm! Wonder what one Kenwood used in the ads? How much value is in that number? Did Kenwood use 10db of attenuation to achieve their +14db number? We'll never know, 'cause they didn't tell us!

Also, if what you meant to say was 3rd order intercept point, your numbers are backwards! Assuming that is what you meant, -16dbm (dbm is the "proper" term here, as a reference is specific; db says nothing of value since the reference '0'db is not specified) is the better of the two mentioned! Altho' it certainly is not very good! A 'good' receiver should be at least +8dbm or better these days. When the numbers in this test go positive, the more positive is better. If they remain negative, the smaller is better (-16dbm is 8db better than -24dbm); but you probably wouldn't want to use that receiver for very long! I wouldn't think I'd been able to use it at all on 40 meters during Field Day if it really was that bad (-24dbm)!

Actually, only 8db difference in this test over the ham bands is pretty good! The worst performance is usually on the lower frequency bands, which is another reason the manufacturers spec their stuff on 14mhz! It always tests better there! So if the test you mentioned actually spec'd it on more than one thats good info to have 'cause they usually don't.

Besides that, I can tell you for sure that on 40 meters during FD I did NOT hear any evidence of the radio being that poor! It handled like a much, much better receiver than that!

All that makes me suspect the test you mentioned, or as you said they may have got hold of a really poor unit. Or perhaps they do the test at much narrower spacings. If they don't say, we'll never know, and the number by itself has no value at all!

Or maybe I got real lucky and got a good one!

<<<<<<<<<<

73's

Paul

WB20YC

ar..

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End of Info-Hams Digest V93 #934

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